

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number  
WO 2004/009846 A1

- (51) International Patent Classification<sup>7</sup>: C12Q 1/68
- (21) International Application Number:  
PCT/EP2003/008476
- (22) International Filing Date: 18 July 2003 (18.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
02/09247 19 July 2002 (19.07.2002) FR
- (71) Applicants (*for all designated States except US*): INSERM [FR/FR]; 101, rue de Tolbiac, F-75654 Paris Cedex 13 (FR). UNIVERSITE DE ROUEN [FR/FR]; 1, rue Thomas-Becket, F-76821 Mont Saint-Aignan Cedex (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): FREBOURG, Thlery [FR/FR]; 12, Rue Tannerg, F-76000 Rouen (FR). TOSI, Mario [FR/FR]; 11, allée Buffon, F-94700 Maisons-Alfort (FR). RAUX, Grégory [FR/FR]; 68, Rue d'Elbeuf, F-76100 Rouen (FR).
- (74) Agent: PARIS, Fabienne; Cabinet Plasseraud, 65/67, rue de la Victoire, F-75440 Paris Cedex 09 (FR).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**  
— *of inventorship (Rule 4.17(iv)) for US only*
- Published:**  
— *with international search report*  
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: QUANTITATIVE MULTIPLEX AMPLIFICATION ON A GENOMIC SCALE, AND APPLICATIONS FOR DETECTING GENOMIC REARRANGEMENTS

(57) Abstract: The present application relates to novel composite primers which make it possible to amplify in multiplex at a quantitative level of precision, and to the application of these composite primers for detecting genomic rearrangements in general, and cryptic chromosomal rearrangements in particular. These composite primers contain a tag the sequence of which is absent from or poorly represented in the genome analyzed, and which exhibits a very low propensity to form stable pairings. The composite primers, which contain them, make it possible to carry out multiplex amplifications with quantitative precision on the scale of a genome such as the human genome.

WO 2004/009846 A1